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Please find below and/or attached an Office communication concerning this application or proceeding.

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patents.us@cognex.com

DETAILED ACTION

This Office action is in response to the Request for Continued Examination filed 13 July 2009.

Continued Examination Under 37 CFR 1.114

All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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Claims 1-17, 20, 23-30, and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meyer et al (US Patent 5,742,504), hereinafter Meyer, in view of Van Dort et al (US Patent 5,537,104), hereinafter Van Dort, and further in view of Silver et al (US Patent 6,931,602), hereinafter Silver and further evidenced by Matrix Vision (<http://www.matrix-vision.com/news/print.php?ProductID=10&lang=en>).

Regarding claim 1, Meyer teaches a machine vision system having a plurality of vision processors (VPs), each being on a respective VP computing platform (taught as the connection of a plurality of digital cameras to a machine vision system, at col. 4, lines 26-28; Meyer also allows for the use of various vision processors and frame grabbers at col. 2, lines 60-61), at least one machine vision user interface (UI) being on a machine vision UI computing platform (taught as the use of a Visual Basic toolbox presented to the user on a machine separate from the VPs for allowing the user control and selective communication with the multiple VPs in the machine vision system and for the viewing of live and still images from those VPs, at col. 4, lines 54-63, and col. 5, lines 4-5 and 15-20). Meyer also teaches a link function enabling a user to configure any second VP using the machine vision UI (taught as the camera control of col. 5, lines 57-67), and for establishing communication between a second VP in the machine vision system and the machine vision UI (taught as the linking of a camera to a Camera control, at col. 6, lines 10-16). Meyer further teaches enabling communication via the network established by the link function enabling a continually updated image display on the at least one machine vision UI representing a current state of a second VP in the machine vision system (taught as the display of live images, at col. 6, lines 10-18). Matrix Vision teaches the use of digital cameras similar to those used by Meyer, with the digital cameras incorporating processor power for the purpose of integrated processing.

Meyer fails to explicitly teach providing a first VP with a link function, the link function being a control function executable by the first VP, and executing the link function so as to issue instructions from the first VP to the UI to establish communication with a second VP.

Van Dort teaches a system for equipment control wherein various units are linked over a common communication channel, which the user may interact with by way of a graphic interface connected to the system. Van Dort allows for the control of audio and video equipment at col. 1, lines 21-25. Furthermore, Van Dort teaches executing a link function so as to issue instructions from a first equipment unit to a UI to establish communication with a second equipment unit (taught as the use of an actuator connected to equipment in the system, wherein a change of state in the actuator sends a signal out to other equipment units, which may change their state in a way contained by the signal, at col. 5, lines 55-64). Furthermore, the graphic interface of Van Dort may be used to generate "mark" and "link" signals between devices, as shown at col. 10, lines 24-28.

Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Meyer and Van Dort before him at the time the invention was made to modify the machine vision system of Meyer to include the equipment message transmission of Van Dort in order to obtain a machine vision system wherein VPs may send link functions capable of changing the state of other VPs.

One would be motivated to make such a combination for the advantage of flexible configuration for interactions between different pieces of equipment in a system. See Van Dort, col. 1, lines 15-18.

However, Meyer and Van Dort fail to explicitly teach the communication of the plurality of VPs and the UI over a network, necessitating that the VPs and the UI are distinct and separate and disposed on distinct and separate computing platforms. Silver teaches a method for the

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control of machine vision tools similar to that of Meyer and Van Dort. Furthermore, Silver teaches the communication of a plurality of VPs and a UI over a network, at col. 2, line 50 through col. 3, line 15. As Silver allows the communication of the VPs and the UI over a network, the fact that the VPs and the UI may be remotely located from one another allows for the VPs, UI and computing platforms to be distinct and separate from one another.

Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Meyer, Van Dort, and Silver before him to modify the machine vision system of Meyer and Van Dort to include the networked communication of Silver. One would have been motivated to make such a combination for the advantage of increased accessibility to multiple vision processor systems. See Silver, col. 1, lines 40-46.

Regarding claim 2, Van Dort teaches a control function having a plurality of parameters, including an identifier of a second VP, taught as the use of an event table enabling response to a multitude of events, and destination addresses in the table to facilitate communication between devices, at col. 6, lines 43-53.

Regarding claim 3, Meyer teaches clicking on a graphical representation of the link function displayed by the machine vision UI, taught as the manipulation of control icons, taught at col. 6, lines 13-17.

Regarding claims 4, 25, and 28, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the graphical representation of Meyer to include selectable underlined text strings. Applicant has not disclosed that underlined text strings provides an advantage, is used for a particular purpose, or solves a stated problem.

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One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the iconic representations of Meyer because both graphical representations involve "point and click" functionality, and produce the same end result.

Therefore, it would have been obvious to one of ordinary skill in the art to modify Meyer and Van Dort to obtain the invention as specified in claims 4, 25, and 28.

Regarding claim 5, Van Dort teaches a control function having a plurality of parameters, including an identifier of a second VP, taught as the use of an event table enabling response to a multitude of events, and destination addresses in the table to facilitate communication between devices, at col. 6, lines 43-53.

Regarding claims 6 and 7, Meyer teaches clicking on a graphical representation of the link function displayed by the machine vision UI to initiate execution of the link function, taught as the manipulation of control icons, taught at col. 6, lines 13-17.

Regarding claims 8 and 9, check boxes and radio buttons in user interfaces are extremely well known in the art, being present in simple java applets up to more complex applications. Therefore, it would have been obvious to one of ordinary skill in the art to include check boxes and radio buttons in a machine vision user interface.

Regarding claims 10-12, Van Dort teaches executing a link function in response to an external event, taught as the execution of a link function in response to events such as a person turning a knob, or temperature reaching a certain value, which may certainly be related in an industrial process, at col. 6, lines 41-43.

Regarding claim 13, the link function of Van Dort is inherently initiated by a programmatic decision, as parameters in the event table of col. 6, lines 37-53 must be at certain values before the link function is executed.

Regarding claim 14, Meyer teaches clicking on a graphical representation of the link function displayed by the machine vision UI to initiate execution of the link function, taught as the manipulation of control icons, taught at col. 6, lines 13-17.

Regarding claim 15, the link function of Van Dort is inherently included in a function execution sequence of a VP each time it is executed.

Regarding claim 16, the camera control function of Meyer allows for the control of one camera, and therefore must close communication with a previously controlled camera. See Meyer, col. 5, lines 57-67 and col. 6, lines 1-20.

Regarding claim 17, Meyer teaches the display of live images on a machine vision UI provided by a camera, which may be a first or second VP, taught as the display of live images, at col. 6, lines 10-18.

Regarding claim 20, Meyer teaches a machine vision system having a plurality of vision processors (VPs), each being on a respective VP computing platform (taught as the connection of a plurality of digital cameras to a machine vision system, at col. 4, lines 26-28; Meyer also allows for the use of various vision processors and frame grabbers at col. 2, lines 60-61), at

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least one machine vision user interface (UI) being on a machine vision UI computing platform (taught as the use of a Visual Basic toolbox presented to the user on a machine separate from the VPs for allowing the user control and selective communication with the multiple VPs in the machine vision system and for the viewing of live and still images from those VPs, at col. 4, lines 54-63, and col. 5, lines 4-5 and 15-20). Matrix Vision teaches the use of digital cameras similar to those used by Meyer, with the digital cameras incorporating processor power for the purpose of integrated processing.

Meyer fails to explicitly teach executing the link function so as to issue instructions from the first VP to the machine vision UI to establish communication with a second VP.

Van Dort teaches a system for equipment control wherein various units are linked over a common communication channel, which the user may interact with by way of a graphic interface connected to the system. Van Dort allows for the control of audio and video equipment at col. 1, lines 21-25. Furthermore, Van Dort teaches executing a link function so as to issue instructions from a first equipment unit to a UI to establish communication with a second equipment unit (taught as the use of an actuator connected to equipment in the system, wherein a change of state in the actuator sends a signal out to other equipment units, which may change their state in a way contained by the signal, at col. 5, lines 55-64). Furthermore, the graphic interface of Van Dort may be used to generate "mark" and "link" signals between devices, as shown at col. 10, lines 24-28.

Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Meyer and Van Dort before him at the time the invention was made to modify the machine vision system of Meyer to include the equipment message transmission of Van Dort in order to obtain a machine vision system wherein VPs may send link functions capable of changing the state of other VPs.

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One would be motivated to make such a combination for the advantage of flexible configuration for interactions between different pieces of equipment in a system. See Van Dort, col. 1, lines 15-18.

However, Meyer and Van Dort fail to explicitly teach the communication of the plurality of VPs and the UI over a network, necessitating that the VPs and the UI are distinct and separate and disposed on distinct and separate computing platforms. Silver teaches a method for the control of machine vision tools similar to that of Meyer and Van Dort. Furthermore, Silver teaches the communication of a plurality of VPs and a UI over a network, at col. 2, line 50 through col. 3, line 15. As Silver allows the communication of the VPs and the UI over a network, the fact that the VPs and the UI may be remotely located from one another allows for the VPs, UI and computing platforms to be distinct and separate from one another.

Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Meyer, Van Dort, and Silver before him to modify the machine vision system of Meyer and Van Dort to include the networked communication of Silver. One would have been motivated to make such a combination for the advantage of increased accessibility to multiple vision processor systems. See Silver, col. 1, lines 40-46.

Regarding claims 23-24, Meyer teaches clicking on a graphical representation of the link function displayed by the machine vision UI to initiate execution of the link function, taught as the manipulation of control icons, taught at col. 6, lines 13-17.

Regarding claim 26, Meyer and Van Dort have been shown *supra* to teach a graphical representation being adapted to respond to user action so as to cause a first VP to instruct a UI to establish communication with a second VP in the machine vision system, the communication

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enabling a continually updated image display on the UI representing a current state of the second VP, and enabling a user to configure the second VP using the at least one UI. See Meyer, col. 4, lines 54-63, and col. 5, lines 4-5 and 15-20 and Van Dort, col. 5, lines 55-64.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate the graphical representation into a spreadsheet. Applicant has not disclosed that the incorporation of the graphical representation into a spreadsheet provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the toolbar of Meyer because a toolbar and a spreadsheet with a graphical representation included would have similar column and row structure, and similar "point and click" functionality.

Therefore, it would have been obvious to one of ordinary skill in the art to modify Meyer and Van Dort to obtain the invention as specified in claim 26.

However, Meyer and Van Dort fail to explicitly teach the communication of the plurality of VPs and the UI over a network, necessitating that the VPs and the UI are distinct and separate and disposed on distinct and separate computing platforms. Silver teaches a method for the control of machine vision tools similar to that of Meyer and Van Dort. Furthermore, Silver teaches the communication of a plurality of VPs and a UI over a network, at col. 2, line 50 through col. 3, line 15. As Silver allows the communication of the VPs and the UI over a network, the fact that the VPs and the UI may be remotely located from one another allows for the VPs, UI and computing platforms to be distinct and separate from one another.

Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Meyer, Van Dort, and Silver before him to modify the machine vision system of Meyer and Van Dort to include the networked communication of Silver. One would have been

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motivated to make such a combination for the advantage of increased accessibility to multiple vision processor systems. See Silver, col. 1, lines 40-46.

Regarding claim 27, the camera control function of Meyer allows for the control of one camera, and therefore must close communication with a previously controlled camera. See Meyer, col. 5, lines 57-67 and col. 6, lines 1-20.

Regarding claim 29, it can be seen in Figs. 4 and 6 of Meyer that the graphical representation for controlling a VP is an iconic representation.

Regarding claim 30, Meyer teaches a machine vision system having a plurality of vision processors (VPs), each being on a respective VP computing platform (taught as the connection of a plurality of digital cameras to a machine vision system, at col. 4, lines 26-28; Meyer also allows for the use of various vision processors and frame grabbers at col. 2, lines 60-61), at least one machine vision user interface (UI) being on a machine vision UI computing platform (taught as the use of a Visual Basic toolbox presented to the user on a machine separate from the VPs for allowing the user control and selective communication with the multiple VPs in the machine vision system and for the viewing of live and still images from those VPs, at col. 4, lines 54-63, and col. 5, lines 4-5 and 15-20). Matrix Vision teaches the use of digital cameras similar to those used by Meyer, with the digital cameras incorporating processor power for the purpose of integrated processing.

Meyer fails to explicitly teach executing the link function so as to issue instructions from the first VP to the machine vision UI to establish communication with a second VP.

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Van Dort teaches a system for equipment control wherein various units are linked over a common communication channel, which the user may interact with by way of a graphic interface connected to the system. Van Dort allows for the control of audio and video equipment at col. 1, lines 21-25. Furthermore, Van Dort teaches executing a link function so as to issue instructions from a first equipment unit to a UI to establish communication with a second equipment unit (taught as the use of an actuator connected to equipment in the system, wherein a change of state in the actuator sends a signal out to other equipment units, which may change their state in a way contained by the signal, at col. 5, lines 55-64). Furthermore, the graphic interface of Van Dort may be used to generate “mark” and “link” signals between devices, as shown at col. 10, lines 24-28.

Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Meyer and Van Dort before him at the time the invention was made to modify the machine vision system of Meyer to include the equipment message transmission of Van Dort in order to obtain a machine vision system wherein VPs may send link functions capable of changing the state of other VPs.

One would be motivated to make such a combination for the advantage of flexible configuration for interactions between different pieces of equipment in a system. See Van Dort, col. 1, lines 15-18.

However, Meyer and Van Dort fail to explicitly teach the communication of the plurality of VPs and the UI over a network, necessitating that the VPs and the UI are distinct and separate and disposed on distinct and separate computing platforms. Silver teaches a method for the control of machine vision tools similar to that of Meyer and Van Dort. Furthermore, Silver teaches the communication of a plurality of VPs and a UI over a network, at col. 2, line 50 through col. 3, line 15. As Silver allows the communication of the VPs and the UI over a

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network, the fact that the VPs and the UI may be remotely located from one another allows for the VPs, UI and computing platforms to be distinct and separate from one another.

Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Meyer, Van Dort, and Silver before him to modify the machine vision system of Meyer and Van Dort to include the networked communication of Silver. One would have been motivated to make such a combination for the advantage of increased accessibility to multiple vision processor systems. See Silver, col. 1, lines 40-46.

Regarding claims 33-34, Meyer teaches user action being a mouse click upon a graphical representation, taught as the use of a Visual Basic toolbox presented to the user on a machine separate from the VPs for allowing the user control and selective communication with the multiple VPs in the machine vision system and for the viewing of live and still images from those VPs, at col. 4, lines 54-63, and col. 5, lines 4-5 and 15-20. Furthermore, the use of underlined text strings as a user manipulable graphical entity (i.e. linking from one web page to another) is notoriously well known in the art, and would have been obvious to substitute in place of the graphical representation stated above.

Claims 22 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meyer, in view of Van Dort, further in view of Silver and further in view of Blowers et al (US Patent 6,298,474), hereinafter Blowers and further evidenced by Matrix Vision (<http://www.matrixvision.com/news/print.php?ProductID=10&lang=en>).

Meyer, Van Dort and Silver have been shown *supra* to teach a graphical representation being adapted to respond to user action so as to cause a first VP on a first VP computing

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platform to instruct a machine vision UI on a machine vision UI computing platform to establish communication with a second VP on a second VP computing platform, the communication enabling a continually updated image display on the machine vision UI representing the current state of the second VP, and enabling a user to configure the second VP using the machine vision UI.

Meyer, Van Dort and Silver fail to explicitly teach a network supporting TCP/IP protocol.

Blowers teaches the use of a network for vision processor/user interface communication (Column 9, Lines 26-28), where the network communicates using TCP/IP protocol (Column 6, Lines 43-45).

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to modify the teachings of Meyer, Van Dort and Silver with those of Blowers to obtain the machine vision system described above by Meyer, Van Dort and Silver that communicates over a network using TCP/IP network protocol.

Motivation for such a combination is given by Blowers, who states the inclusion of such configuration: "there is illustrated schematically a machine vision system generally indicated at **20** generally of the type which can be supported by the method and system of the present invention" (Column 7, Lines 40-43).

Response to Arguments

Applicant's arguments filed 13 July 2009 have been fully considered but they are not persuasive.

With respect to Applicant's arguments of pages 12 and 13 of the remarks that the Meyer reference fails to teach representing "a current state of the any second distinct and separate VP connected to the network." The examiner respectfully disagrees. Initially, the examiner would

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like to note that Applicant has mistakenly referred to the Van Dort reference as teaching said argued limitations of claim 1. The examiner has thus interpreted the argument of said limitations to be directed toward the Meyer reference.

As to Applicant's argument concerning Meyer and the claimed representation of "a current state of the any second distinct and separate VP connected to the network", the examiner believes Applicant has misinterpreted the Meyer reference in stating that "the 'live image views' provided by the cameras are do not [sic] provide the current view of the camera, as would be required by the claim language", and similar arguments concerning the notion that Meyer does not provide for a "continually updated image display", as claimed. However, the examiner notes that Meyer clearly discloses at col. 6, lines 11-19 the display of live images from a camera via the Camera control, with such live image viewing being separate from frame grabbing (i.e. "to display a live image, click on the viewfinder on the Camera control"). Therefore, the examiner contends that Meyer does indeed teach a "continually updated image display", as live images are displayed prior to the single frame grabbing.

Applicant further argues on pages 13 and 14 that the Van Dort reference does not teach "executing a link function so as to issue instructions from a first VP to a UI to establish communication with a second VP", as claimed. Applicant argues that "there is no contemplation of the audio and/or video equipment of Van Dort issuing instructions to other equipment units", stating that Van Dort teaches "actuator units as issuing instructions to the equipment units". However, Van Dort at col. 5, line 65 through col. 6, line 5 states:

Equipment units and actuator units are not mutually exclusive. For example, an actuator may switch on a piece of equipment which will operate till a predetermine condition occurs. When said condition occurs the equipment will behave as an actuator and switch another piece of equipment

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such as an alarm or an indicator on the original actuator unit. **Consequently, in the system the actuator and equipment units are treated as equivalent.**

Therefore, the examiner that the Van Dort reference does indeed teach audio and/or video equipment issuing instructions to other equipment units and in combination with the Meyer reference teaches the limitations of claim 1 concerning "executing a link function so as to issue instructions from a first VP to a UI to establish communication with a second VP".

On pages 14 and 15 of the remarks, Applicant argues with respect to the Silver reference, stating that Silver does not teach "multiple vision processors". The examiner agrees with Applicant's assertion, but notes that the Silver reference is not relied upon to teach such. Silver teaches the connection of a machine vision tool computer to a network, a feature lacking in Meyer and Van Dort, who teach local vision processor communication and multiple vision processors. Therefore, as Silver teaches communication of a vision processor over a network, a combination of Meyer, Van Dort, and Silver would lead to the communication of a plurality of vision processors over a network, further enabling the vision processors to be "distinct and separate", as they are not integrated into the same system.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL ROSWELL whose telephone number is (571)272-4055. The examiner can normally be reached on 9:30 - 6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kieu Vu can be reached on (571) 272-4057. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael Roswell
8/26/2009

/Ting Zhou/
Primary Examiner, Art Unit 2173